

06/03/14





Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D58015

Sampling Date: 05/21/14

Report to:

K.P. Kauffman Company, Inc. 1675 Broadway Suite 2800 Denver, CO 80202-4628

mhattel@msn.com; slaramesa@kpk.com; kgilbert@kpk.com; dkuhn@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 24



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Seed wall

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

K.P. Kauffmann Company, Inc.

Job No:

D58015

Wattenberg Tank

Sample	Collected			Matr	ix	Client
Sample Number	Date	Time By	Received	Code	Туре	Sample ID
D58015-1	05/21/14	10:35 MDH	05/21/14	AQ	Water	TANK-1
D58015-1F	05/21/14	10:35 MDH	05/21/14	AQ	Water Filtered	TANK-1



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffmann Company, Inc. Job No

D58015

Site:

Wattenberg Tank

Report Date

6/3/2014 4:25:24 PM

On 05/21/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D58015 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP13001

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58043-1AMS, D58043-1AMSD, D58043-1ASDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Sodium are outside control limits for sample MP13001-SD1. Probable cause due to sample homogeneity.
- MP13001-SD1 for Sodium: Serial dilution indicates possible matrix interference.

Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID:

The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AO

Batch ID:

GP12715

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D57984-3MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP12640

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58049-3MS, D58049-3MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D58015-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D58015-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.



Wet Chemistry By Method SM 2540C-2011

Matrix AQ Batch ID:

GN24826

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58015-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011

Matrix AQ

Batch ID:

GP12673

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58110-2DUP, D58110-2MS, D58110-2MSD were used as the QC samples for the Total Organic Carbon analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix AQ

Batch ID: GN24797

D58015-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Page 1 of 1

Summary of Hits Job Number: D58015

Account:

K.P. Kauffmann Company, Inc.

Wattenberg Tank 05/21/14

Project: Collected:

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL MD	L Units	Method
D58015-1 TANK-1	helfler Leve	Lacon and the same of the same		
Chloride	10400	500	mg/l	EPA 300.0/SW846 9056
HEM Oil and Grease	325	4.9	mg/l	EPA 1664A
Solids, Total Dissolved	19100	10	mg/l	SM 2540C-2011
Specific Gravity by Hydrometer	1.0122		Ü	ASTM D287
Sulfate	61.3	50	mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	287	50	mg/l	SM 5310B-2011
pH a	6.63		su	SM4500HB+-2011/9040C
D58015-1F TANK-1				
Calcium	338000	20000	ug/l	SW846 6010C
Magnesium	35900	10000	ug/l	SW846 6010C
Potassium	171000	50000	ug/l	SW846 6010C
Sodium	7120000	20000	ug/l	SW846 6010C

⁽a) Analysis performed past the required 15 minutes from collection time/holding time.



Sample	Results
--------	---------

Report of Analysis

Client Sample ID: TANK-1 Lab Sample ID: D58015-1 Matrix:

AQ - Water

Date Sampled: Date Received:

05/21/14 05/21/14

Percent Solids: n/a

Project:

Wattenberg Tank

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride HEM Oil and Grease Nitrogen, Nitrate ^a Nitrogen, Nitrite ^a Solids, Total Dissolved Specific Gravity by Hydromete Sulfate Total Organic Carbon	10400 325 <1.0 <0.40 19100 1.0122 61.3 287	500 4.9 1.0 0.40 10	mg/l mg/l mg/l mg/l mg/l mg/l	1000 1 100 100 1 1 1 100 50	05/22/14 18:21 06/03/14 05/22/14 10:28 05/22/14 10:28 05/27/14 05/29/14 05/22/14 10:28 05/29/14 13:16	SWT JB JB AK MM JB	EPA 300.0/SW846 9056 EPA 1664A EPA 300.0/SW846 9056 EPA 300.0/SW846 9056 SM 2540C-2011 ASTM D287 EPA 300.0/SW846 9056 SM 5310B-2011
pH ^b	6.63		su	1	05/22/14 13:00	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

Client Sample ID:

TANK-1

Lab Sample ID: Matrix:

D58015-1F

AQ - Water Filtered

Date Sampled: Date Received:

05/21/14

Percent Solids: n/a

05/21/14

Project:

Wattenberg Tank

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium Magnesium Potassium Sodium	338000 35900 171000 7120000	20000 10000 50000 20000	ug/l ug/l ug/l ug/l	5 5 5 5	05/23/14	00.20.	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹	SW846 3010A ² SW846 3010A ² SW846 3010A ² SW846 3010A ²

(1) Instrument QC Batch: MA4799(2) Prep QC Batch: MP13001



Custody Documents and Other Form	IS

· Chain of Custody



CH	ATN	OF	CUST	YTO
	TILE	V/I	CUBI	ODI

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	K.P. Kauffman Company, Inc.					HALL	EIVE.		17.11																	GW- Ground Water
Address				Street	Street								١,										- 1	WW- Water		
1675 E	Broadway, Suite 2800		Zip	City	City State						-	l i			~	'			l		1		SW- Surface Water SO- Soil			
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Project Can	Susana Lara-Mesa	<u>SLaraMesa</u>	@kpk.com	[Fraject #										1		F 61		5	=						LI	Q- Other Liquid
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Accutest		SUMMA #		Collecti	on			Nun		-	eser	ved E			8	현의		F	SPECIFIC	S	O	ŀ			\vdash	WP-Wipe
Sample #	Field ID / Point of Collection	MEOH Viai #		Time	Sampled by	Matrix	# of bottles	ğ	NaOH	88 § ₹	ğ	1484-15	F.O.	SNEO	d l	S S	Ŧ	8	S.	TDS	700				_ '	LAB USE ONLY
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D58015: Chain of Custody Page 1 of 1



Metals Ar

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

05/23/14

Prep Date:					03/23/14	 	
Metal	RL	IDL	MDL	MB raw	final		
Aluminum	100	11	41			 	
Antimony	30	2.1	19				
Arsenic	25	3.8	5.6				
Barium	10	.2	1.4				
Beryllium	10	.9	1.2				
Boron	50	.8	6.6				
Cadmium	10	.2	.36				
Calcium	400	2.4	41	11.3	<400		
Chromium	10	.3	. 4				
Cobalt	5.0	.5	.57				
Iron	70	1.5	9.5				
Lead	50	2.1	21				
Lithium	5.0	. 4	2.7				
Magnesium	200	6.8	19	-4.4	<200		
Manganese	5.0	.5	.46				
Molybdenum	10	. 4	.84				
Nickel	30	.5	.87				
Phosphorus	100	15	20				
Potassium	1000	99	270	-33	<1000		
Selenium	50	7.1	11				
Silicon	50	4.7	5.2				
Silver	30	.3	.6				
Sodium	400	7.3	170	45.3	<400		
Strontium	5.0	.01	.12				
Thallium	10	1.8	4				
Tin	50	12	16				
Titanium	10	.1	2.1				
Uranium	50	2.9	5.5				
Vanadium	10	. 4	. 4				
Zinc	30	. 4	3.2				

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

05/23/14

Metal	D58043-: Origina		Spikelot ICPALL2		QC Limits	
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	4800	31900	25000	108.4	75–125	
Chromium	anr					
Cobalt						
Iron						
Lead	anr					
Lithium						
Magnesium	774	23600	25000	91.3	75-125	
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	4940	31000	25000	104.2	75-125	
Selenium	anr					
Silicon						
Silver	anr					
Sodium	858000	900000	25000	168.0(a)	75-125	
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

05/23/14

		- 13 3 1	22	 	
Metal	D58043-1A Original MS	Spikelot ICPALL2 % Rec	QC Limits		
1				 	

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

05/23/14

rrep bace.					03/23/2	
Metal	D58043- Origina		Spikelot ICPALL2		MSD RPD	QC Limit
Aluminum	1				1 1111	
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	4800	31400	25000	106.4	1.6	20
Chromium	anr					
Cobalt						
Iron						
Lead	anr					
Lithium						
Magnesium	774	23100	25000	89.3	2.1	20
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	4940	30500	25000	102.2	1.6	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	858000	885000	25000	108.0	1.7	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

05/23/14

Metal	BSP Result	Spikelot ICPALL2		QC Limits		
Aluminum			#133,14		 	
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	25100	25000	100.4	80-120		
Chromium	anr					
Cobalt						
Iron						
Lead	anr					
Lithium						
Magnesium	23200	25000	92.8	80-120		
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	24000	25000	96.0	80-120		
Selenium	anr					
Silicon						
Silver	anr					
Sodium	22400	25000	89.6	80-120		
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

05/23/14

rrep bace:			05/25/14				
Metal	D58043-1 Original	A SDL 1:5	%DIF	QC Limits			
Aluminum							
Antimony	anr						
Arsenic	anr						
Barium	anr						
Beryllium	anr						
Boron	anr						
Cadmium	anr						
Calcium	4800	5260	9.5	0-10			
Chromium	anr						
Cobalt							
Iron							
Lead	anr						
Lithium							
Magnesium	774	846	9.3	0-10			
Manganese							
Molybdenum							
Nickel	anr						
Phosphorus							
Potassium	4940	5300	7.2	0-10			
Selenium	anr						
Silicon							
Silver	anr						
Sodium	858000	971000	13.2*(a)	0-10			
Strontium							
Thallium							
Tin							
Titanium							
Uranium							
Vanadium							
Zinc	anr						

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.



General	Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12640/GN24805	0.50	0.0	mg/l	5	4.85	97.0	90-110%
HEM Oil and Grease	GP12715/GN24930	5.0	0.0	mg/l	40	34.1	85.3	78-114%
Nitrogen, Nitrate	GP12640/GN24805	0.010	0.0	mg/l	0.1	0.0991	99.1	90-110%
Nitrogen, Nitrite	GP12640/GN24805	0.0040	0.0	mg/l	0.05	0.0477	95.4	90-110%
Solids, Total Dissolved	GN24826	10	0.0	mg/l	400	405	101.3	90-110%
Sulfate	GP12640/GN24805	0.50	0.0	mg/l	5	5.12	102.4	90-110%
Total Organic Carbon	GP12673/GN24865	1.0	0.0	mg/l	8.82	8.41	95.4	90-110%
Hq	GN24797			su	8.00	8.00	100.0	99.3-100.

Associated Samples: Batch GN24797: D58015-1 Batch GN24826: D58015-1 Batch GP12640: D58015-1 Batch GP12673: D58015-1 Batch GP12715: D58015-1 (*) Outside of QC limits

Page 1

BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit	
HEM Oil and Grease	GP12715/GN24930	mg/l	40	36.9	7.9	20%	

Associated Samples: Batch GP12715: D58015-1 (*) Outside of QC limits

DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN24826	D58015-1	mg/l	19100	19100	0.0	0-20%
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	1.0	9.5	0-20%

Associated Samples: Batch GN24826: D58015-1 Batch GP12673: D58015-1 (*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12640/GN24805	D58049-3	mg/l	43.2	25	134	104.0	80-120
Chloride	GP12640/GN24805	D58049-3	mg/l	108	25	134	104.0	80-120
HEM Oil and Grease	GP12715/GN24930	D57984-3	mg/l	0.0	40	36.7	91.8	78-114
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.38	0.1	0.48	100.0	80-120
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.34	0.1	0.48	100.0	80-120
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.81	0.25	1.0	92.3	80-120
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.78	0.25	1.0	92.3	80-120
Sulfate	GP12640/GN24805	D58049-3	mg/l	50.9	25	85.9	105.6	80-120
Sulfate	GP12640/GN24805	D58049-3	mg/l	59.5	25	85.9	105.6	80-120
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	10	11.2	101.0	80-120

Associated Samples:
Batch GP12640: D58015-1
Batch GP12673: D58015-1
Batch GP12715: D58015-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D58015 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

		^^		0.1.11	0-11-	MOD		00	
Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit	
Chloride	GP12640/GN24805	D58049-3	mg/l	43.2	25	134	0.0	20%	
Chloride	GP12640/GN24805	D58049-3	mg/l	108	25	134	0.0	20%	
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.38	0.1	0.49	2.1	20%	
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/1	0.34	0.1	0.49	2.1	20%	
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/1	0.81	0.25	1.0	0.1	20%	
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.78	0.25	1.0	0.1	20%	
Sulfate	GP12640/GN24805	D58049-3	mg/l	50.9	25	85.8	0.1	20%	
Sulfate	GP12640/GN24805	D58049-3	mg/l	59.5	25	85.8	0.1	20%	
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	10	10.9	2.7	20%	

Associated Samples: Batch GP12640: D58015-1 Batch GP12673: D58015-1 (*) Outside of QC limits (N) Matrix Spike Rec. outside of QC limits



07/07/14





Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg Tank

PO# 7591

Accutest Job Number: D59056

Sampling Date: 06/23/14

Report to:

K.P. Kauffman Company, Inc. 1675 Broadway Suite 2800 Denver, CO 80202-4628

mhattel@msn.com; slaramesa@kpk.com; kgilbert@kpk.com; dkuhn@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 28



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Seed wall

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.

1 of 2

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Sample Summary

K.P. Kauffman Company, Inc.

Job No:

D59056

Wattenberg Tank Project No: PO# 7591

Sample	Collected			Matrix		Client
Number	Date	Time By	Received	Code	Туре	Sample ID
D59056-1	06/23/14	09:15 MH	06/23/14	AQ	Water	TANK-I
D59056-1F	06/23/14	09:15 MH	06/23/14	AO	Water Filtered	TANK-I





CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No

D59056

Site:

Wattenberg Tank

Report Date

7/7/2014 3:28:12 PM

On 06/23/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 13.3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59056 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP13281

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58834-1FMS, D58834-1FMSD, D58834-1FSDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN25366

The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID: GP12969

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP12887

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59047-6MS, D59047-6MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D59056-1 for Sulfate: Elevated detection limit due to matrix interference.
- D59056-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59056-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2540C-2011

Matrix AQ

Batch ID:

GN25298

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59056-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

4 of 28

ACCUTESTS

D59056

Wet Chemistry By Method SM 5310B-2011

Matrix AQ

Batch ID: GP12920

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59118-1MS, D59118-1MSD, D59118-2DUP were used as the QC samples for the Total Organic Carbon analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix AQ

Batch ID: GN25245

D59056-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Account:

K.P. Kauffman Company, Inc.

Project:

Wattenberg Tank

Collected:

06/23/14

Lab Sample ID Client Sample II Analyte	Result/ Qual	RL MDI	L Units	Method
D59056-1 TANK-I	k i de la company			
Chloride	11200	500	mg/l	EPA 300.0/SW846 9056
HEM Oil and Grease	160	4.8	mg/l	EPA 1664A
Solids, Total Dissolved	20700	10	mg/l	SM 2540C-2011
Specific Gravity by Hydrometer	1.0165			ASTM D287
Total Organic Carbon	227	50	mg/l	SM 5310B-2011
pH a	6.86		su	SM4500HB+-2011/9040C
D59056-1F TANK-I				
Calcium	319000	20000	ug/l	SW846 6010C
Magnesium	41900	10000	ug/l	SW846 6010C
Potassium	1090000	50000	ug/l	SW846 6010C
Sodium	5700000	20000	ug/l	SW846 6010C

⁽a) Analysis performed past the required 15 minutes from collection time/holding time.





Sampl	le R	esul	ts
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Report of Analysis



Client Sample ID: TANK-I

Lab Sample ID:

D59056-1

Date Sampled: 06/23/14

Matrix:

AQ - Water

Date Received: 06/23/14

Percent Solids: n/a

Project:

Wattenberg Tank

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride	11200	500	mg/l	1000	06/23/14 17:17		EPA 300.0/SW846 9056
HEM Oil and Grease	160	4.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate a	< 1.0	1.0	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite a	< 0.40	0.40	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	20700	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Specific Gravity by Hydromet	te 1.0165		-	1	07/01/14	MM	ASTM D287
Sulfate ^a	< 50	50	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Total Organic Carbon	227	50	mg/l	50	06/26/14 15:15	SK	SM 5310B-2011
pH b	6.86		su	1	06/23/14 14:40	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

Client Sample ID:

TANK-I

Lab Sample ID:

D59056-1F

Matrix:

AQ - Water Filtered

Date Sampled:

06/23/14

Date Received: 06/2
Percent Solids: n/a

ed: 06/23/14

Project:

Wattenberg Tank

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium Magnesium	319000 41900	20000 10000	ug/l ug/l	5 5	00.20.2	06/27/14 KV 06/27/14 KV	SW846 6010C ¹ SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³
Potassium	1090000	50000	ug/l	5	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	5700000	20000	ug/l	5	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933(2) Instrument QC Batch: MA4938(3) Prep QC Batch: MP13281



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Project Cor	lact: Susana Lara-Mesa	SLaraMesa	@kok.com	Project#													Mg	È				ĺ		
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D59056: Chain of Custody Page 1 of 1





QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D59056 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Prep Date:					06/26/14		
Metal.	RL	IDL	MDL	MB raw	final		
Aluminum	100	8.6	41				
Antimony	30	2.1	19				
Arsenic	25	3.8	5.6				
Barium	10	.2	1.4				
Beryllium	10	.8	1.2				
Boron	50	.8	6.6				
Cadmium	10	.2	.36				
Calcium	400	2.2	41	5.9	<400		
Chromium	10	.3	. 4				
Cobalt	5.0	. 4	.57				
Copper	10	.8	1.9				
Iron	70	1.5	9.5				
Lead	50	2.1	21				
Lithium	5.0	. 4	2.7				
Magnesium	200	6.8	19	6.1	<200		
Manganese	5.0	.01	.46				
Molybdenum	10	. 4	.84				
Nickel	30	.5	.87				
Phosphorus	100	15	20				
Potassium	1000	99	270	9.8	<1000		
Selenium	50	7.1	11				
Silicon	50	4.7	5.2				
Silver	30	.3	.6				
Sodium	400	4.9	170	29.5	<400		
Strontium	5.0	.01	.12				
Thallium	10	1.8	4				
Tin	50	12	16				
Titanium	10	.1	2.1				
Uranium	50	2.9	5.5				
Vanadium	10	. 4	. 4				
Zinc	30	. 4	3.2				

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal RL IDL MDL raw final				MB		
	Metal	RL	MDL		final	

(anr) Analyte not requested

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal	D58834-1 Original		Spikelot ICPALL2		QC Limits	
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	110000	133000	25000	92.0	75-125	
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	8370	35200	25000	107.3	75-125	
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	4190	32200	25000	112.0	75-125	
Selenium	anr					
Silicon						
Silver	anr					
Sodium	6720	34100	25000	109.5	75-125	
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

	D58834-1F	Spikelot	QC
Metal	Original MS	ICPALL2 % Rec	Limits

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested $% \left\{ 1,2,\ldots ,2,3,\ldots \right\} =0$





Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal	D58834-1 Original		Spikelot ICPALL2		MSD RPD	QC Limit	
Aluminum							
Antimony	anr						
Arsenic	anr						
Barium	anr						
Beryllium	anr						
Boron	anr						
Cadmium	anr						
Calcium	110000	137000	25000	108.0	3.0	20	
Chromium	anr						
Cobalt							
Copper	anr						
Iron							
Lead	anr						
Lithium							
Magnesium	8370	35600	25000	108.9	1.1	20	
Manganese	anr						
Molybdenum	anr						
Nickel	anr						
Phosphorus							
Potassium	4190	32600	25000	113.6	1.2	20	
Selenium	anr						
Silicon							
Silver	anr						
Sodium	6720	34400	25000	110.7	0.9	20	
Strontium							
Thallium							
Tin							
Titanium							
Uranium							
Vanadium							
Zinc	anr						

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

06/26/14

	D58834-1F	Spikelot	MSD	QC
Metal	Original MSD	ICPALL2 % Rec	RPD	Limit

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested $% \left\{ 1,2,\ldots ,2,3,\ldots \right\} =0$

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal	BSP Result	Spikelot ICPALL2		QC Limits		
Aluminum					The state of the s	Fifth 1
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	26900	25000	107.6	80-120		
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	26500	25000	106.0	80-120		
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	27000	25000	108.0	80-120		
Selenium	anr					
Silicon						
Silver	anr					
Sodium	26600	25000	106.4	80-120		
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

06/26/14

BSP Spikelot QC Metal Result ICPALL2 % Rec Limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Methods: SW846 6010C

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Matrix Type:				Units: ug/l
Prep Date:		06/26/14	I	
Metal	D58834-1F Original SDL 1:5	%DIF	QC Limits	
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	110000 118000	7.2	0-10	
Chromium	anr			
Cobalt				

Molybdenum anr
Nickel anr
Phosphorus
Potassium 4190 4220 0.7 0-10
Selenium anr
Silicon
Silver anr

6670

8710

4.1

0.7

0-10

0-10

Titanium

Sodium

Strontium
Thallium
Tin

Copper

Lithium Magnesium

Manganese

Iron Lead anr

anr

8370

anr

6720

Uranium

Vanadium

Zinc

Zinc anr
Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



SERIAL DILUTION RESULTS SUMMARY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

			111.011111	
	D58834-1F	QC .		
Metal	Original SDL 1:5 %DIF	Limits		

(anr) Analyte not requested



General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.

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	Proj	ect:	Wat	tenb	era 1	ľank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12887/GN25243	0.50	0.0	mq/l	5	4.97	99.4	90-110%
HEM Oil and Grease	GP12969/GN25402	5.0	0.0	mq/l	40	32.8	82.0	78-114%
Nitrogen, Nitrate	GP12887/GN25243	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%
Nitrogen, Nitrite	GP12887/GN25243	0.0040	0.0	mg/l	0.05	0.0523	104.6	90-110%
Solids, Total Dissolved	GN25298	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP12887/GN25243	0.50	0.0	mg/l	5	4.96	99.2	90-110%
Total Organic Carbon	GP12920/GN25309	1.0	0.0	mg/l	8.82	8.84	100.2	90-110%
nH	GN25245			SII	8.00	8.03	100.4	99.1-100

Associ	Lated	Samp	le	s:
Batch	GN252	45:	D5	90

Batch GN25245: D59056-1 Batch GN25298: D59056-1 Batch GP12887: D59056-1 Batch GP12920: D59056-1 Batch GP12969: D59056-1 (*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP12969/GN25402	mg/l	40	34.9	6.2	20%

Associated Samples: Batch GP12969: D59056-1 (*) Outside of QC limits

DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN25298	D59056-1	mg/l	20700	20700	0.0	0-20%
Total Organic Carbon	GP12920/GN25309	D59118-2	mg/l	3.2	3.1		0-20%

Associated Samples: Batch GN25298: D59056-1 Batch GP12920: D59056-1 (*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12887/GN25243	D59047-6	mg/l	34.8	50	84.3	99.0	80-1209
Nitrogen, Nitrate	GP12887/GN25243	D59047-6	mg/l	0.43	1	1.5	107.0	80-1209
Nitrogen, Nitrite	GP12887/GN25243	D59047-6	mg/l	0.0	0.5	0.51	102.0	80-1209
Sulfate	GP12887/GN25243	D59047-6	mg/l	172	50	223	102.0	80-1209
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.4	102.0	80-1209

Associated Samples: Batch GP12887: D59056-1 Batch GP12920: D59056-1 (*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP12887/GN25243	D59047-6	mg/l	34.8	50	84.0	0.4	20%
Nitrogen, Nitrate	GP12887/GN25243	D59047-6	mq/l	0.43	1	1.5	0.0	20%
Nitrogen, Nitrite	GP12887/GN25243	D59047-6	mq/l	0.0	0.5	0.55	7.5	20%
Sulfate	GP12887/GN25243	D59047-6	mq/l	172	50	223	0.0	20%
Total Organic Carbon	GP12920/GN25309	D59118-1	mq/l	3.2	10	13.1	2.3	20%

Associated Samples: Batch GP12887: D59056-1 Batch GP12920: D59056-1

(*) Outside of QC limits (N) Matrix Spike Rec. outside of QC limits

APEX CONSULTING SERVICES, INC.



July 18, 2014

566 West Willow Court <u>Reply to:</u> P.O. Box 369 Louisville, CO 80027-0369 Phone: 303-665-1400

Fax: 303-665-0620 email: info@apexcsi.us

Ms. Susana Lara-Mesa K.P. Kauffman Company, Inc. World Trade Center 1675 Broadway, Suite 2800 Denver, CO 80202-4825

Re: June 2014, Groundwater Monitoring, Wattenberg Disposal Facility, Weld County, Colorado

Dear Ms. Lara-Mesa:

Apex Consulting Services, Inc. (APEX) has completed the June 2014 (semi-annual) groundwater monitoring at the Wattenberg Disposal Facility (Facility) in Weld County, Colorado (Figure 1). This letter report presents a summary of the work performed, the results of the groundwater analysis, and our conclusions.

BACKGROUND

The Facility was originally constructed in 1972 by the Amoco Production Company to dispose of production water from oil and gas wells in the D-J Basin. Wright's Disposal, Inc. purchased the Facility from Amoco in June 1989 and K.P. Kaufman Company, Inc. (KPK) purchased the Facility in June 1998. KPK currently operates the Facility for deep injection disposal of non-hazardous Class I and Class II liquid waste as defined in 40 CFR 144.6. The Facility is operated under the U.S. EPA Underground Injection Control Program, Final Permit No. CO 1516-2115. Three groundwater observation wells (OW-1, OW-2, and OW-3) are located around the periphery of the Facility to monitor groundwater flow direction, gradient, and quality. A groundwater monitoring plan was prepared by Nationwide Environmental Services, Inc. on January 3, 2002. The monitoring plan was subsequently approved by the Solid Waste Unit of the Colorado Department of Public Health and Environment. The monitoring plan included semi-annual groundwater monitoring (OW-1, OW-2, and OW-3) for major cations (calcium, magnesium, potassium, and sodium), major anions (bicarbonate, carbonate, chloride, nitrate, nitrite, and sulfate), Total Organic Carbon (TOC), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and Total Petroleum Hydrocarbons (TPH). During the January 2007 sampling event, product was encountered on the groundwater in observation well OW-3. Contaminated soils in the vicinity of observation well OW-3 were excavated and replaced with clean fill. Observation well OW-3 was removed during the excavation of the contaminated soils. Following the removal of the contaminated soil, a new observation well (OW-3) was installed at the previous location. At the request of the Colorado Department of Public Health and Environment, an additional observation well (OW-4) was installed to confirmed the presence of benzene in observation well OW-1. In a September 2013 meeting with CDPHE, KPK noted that a release from an up-gradient facility occurred in 2008. In the meeting, KPK agreed to analyze laboratory data from OW-1 (from 2008 to the present) and to include STIFF diagrams in the December 2013 monitoring report. On March 4, 2014, an additional observation well was completed to the southeast of the Facility. The observation well was completed to a total depth of 24 feet. To date, groundwater has not been measured in the observation well. In a May 2014 meeting at the Facility with CDPHE, KPK agreed to compare and contrast laboratory data from the observation wells to laboratory data from the production water. A report detailing the work will be submitted in a separate document.

GROUNDWATER SAMPLING

Groundwater samples were collected for laboratory analyses from observation wells OW-1, OW-2, OW-3 and OW-4 on June 23, 2014. Prior to groundwater sampling, groundwater elevations were measured and recorded in



Ms. Lara-Mesa July 18, 2014 Page 2

each of the aforementioned observation wells located at the Property. Due to the presence of benzene, a second groundwater sample was collected for laboratory analyses from observation well OW-1 on July 9, 2013 and from observation well OW-3 on July 16, 2014. The locations of the observation wells are illustrated on Figure 2. Each of the wells was surveyed to a local datum. Shallow groundwater was present in the wells at depths ranging from approximately 8.55 (OW-1) to 20.7 (OW-4) feet below the ground surface (bgs). Relative groundwater elevations are shown on Figure 2. Groundwater flow direction was determined to be to the north-northwest for this monitoring period. Free product was not present on the groundwater in any of the wells. The observation wells were prepared for sampling by purging three wet well volumes of groundwater from each well with a dedicated bailer. During purging of each observation well, pH, specific conductance, and temperature were measured. The probes were calibrated before (within 2 hours) taking the measurements. Specific conductance was measured using equivalent EPA standard method 9050. Temperature and pH were measured using a standard probe equivalent to EPA standard method 9040 or 150.1. Groundwater was sampled from the observation wells with a dedicated bailer when pH, specific conductance, and temperature parameters were stable. The pH, specific conductance, and temperature measurements recorded for each sample are summarized on Tables 1, 2, and 3.

GROUNDWATER LABORATORY ANALYSES

The groundwater samples were handled with clean, new, nitrile gloves and placed in laboratory supplied vials and bottles. The samples and a trip blank (distilled water) were stored on ice in a cooler and delivered to Accutest Laboratories (ACCUTEST) under chain-of-custody documentation. The groundwater samples collected from the observation wells were analyzed for calcium, magnesium, potassium, sodium, chloride, nitrate, nitrite, sulfate, TOC, bicarbonate, carbonate, BTEX, and TPH. Laboratory results are summarized on Tables 1, 2, and 3. Laboratory reports provided by ACCUTEST are included in Attachment I.

CONCLUSIONS

Groundwater samples were collected for laboratory analysis from the observation wells OW-1, OW-2, OW-3 and OW-4 on June 23, 2014. The analytical results for this monitoring event are consistent with the results from previous monitoring events except for benzene and sulfate. The sulfate concentration in observation well OW-1 was less than historical concentrations. Benzene was detected at a concentration of 45.5 ug/L in the sample collected from observation well OW-1. Benzene was also detected at a concentration of 2.6 ug/L in the sample collected from observation well OW-3. Finally, ethylbenzene was detected at concentration of 1.7 ug/L in the sample collected from observation well OW-1. In accordance with the Facility groundwater monitoring plan, a confirmatory sample was collected from BTEX analysis from observation well OW-1 on July 9, 2013 and from observation well OW-3 on July 16, 2014. Benzene was detected at a concentration of 12 ug/L in the confirmatory sample collected from observation well OW-1. BTEX compounds were not detected above the method detection limits in the confirmatory sample collected from observation well OW-3.

According to the groundwater monitoring plan, if BTEX compounds are detected in confirmatory samples, then the assessment monitoring is required. We recommend collecting groundwater samples for BTEX analysis from OW-1 on quarterly basis. We also recommend contacting EPA and CDPHE to determine what additional assessment monitoring, if any, will be required at the Facility. Finally, we recommend submitting a compare laboratory data from the observation wells to laboratory data from the production water

The next semi-annual groundwater monitoring event is scheduled for December 2014. Following the conclusion of the next semi-annual groundwater monitoring event, the data will be evaluated to determine if there is a significant change in groundwater elevation and/or quality (specifically sulfate concentrations in observation well OW-1).



Ms. Lara-Mesa July 18, 2014 Page 3

If you have any questions or comments, please call.

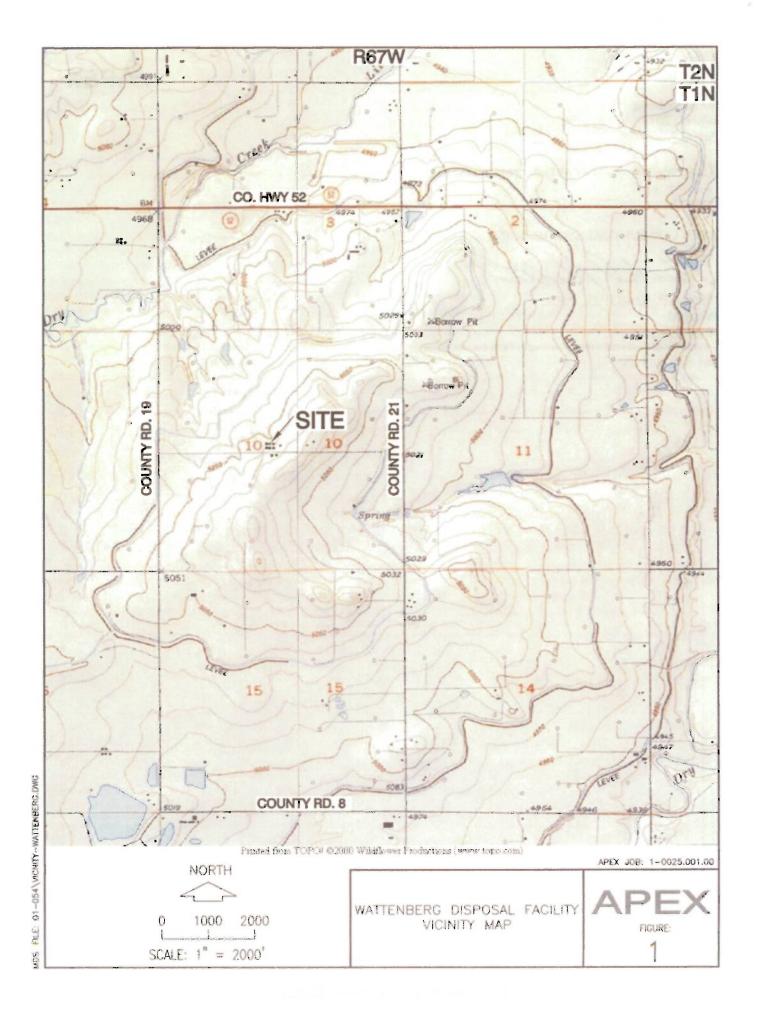
Sincerely,

APEX CONSULTING SERVICES, INC.

Michael D. Hattel, P.G., P.E.S.

Principal

Attachments C:\Uscrs\Owner\Documents\KPK (025)\Wattenberg\Rpts\KPK.GW.RPT.0614.rtf



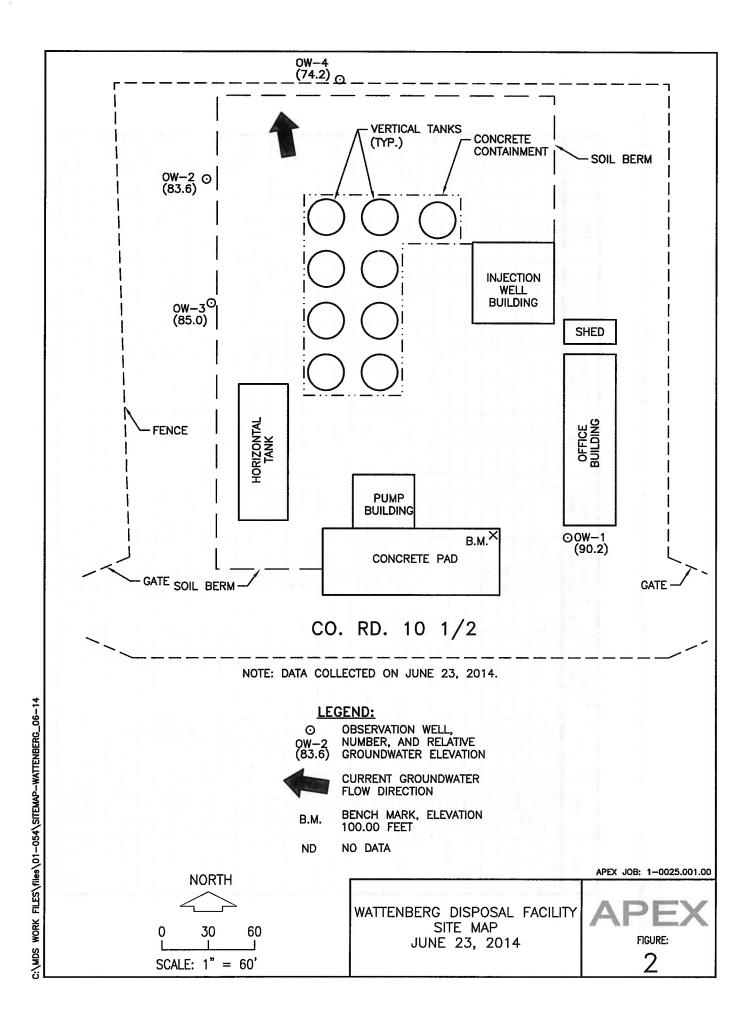


TABLE 1
Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC⁴ (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	<.15	<.18	<.24	<.63	<1.6	79.0
	12/16/02	6.54	14.9	>4000	<.15	<.18	<.24	<.63	<1.6	29.0
	6/30/03	6.64	13.2	>4000	<1.5	<.18	<.24	<.63	<1.6	250.0
	12/30/03	6.54	14.1	>4000	<.15	<.18	<.24	<.63	<1.6	86.0
	6/30/04	6.19	13.2	>4000	<.18	<.21	<.17	<.96	<1.5	28.0
	12/29/04	6.30	12.9	>4000	<.18	<.21	<.17	<.96	<1.6	33.0
	6/30/05	6.60	13.2	>4000	<.07	<.07	<.07	<.20	<1.5	27.0
	12/28/05	6.85	15.5	>4000	<.07	<.07	<.08	<.20	<1.5	27.0
	6/29/06	6.54	13.5	>4000	1.00	<.07	1.1	5.00	<1.5	140.0
	7/27/06 ⁵	6.51	13.6	>4000	<.07	<.07	<.08	<.20	NA	NA
	1/25/07	6.81	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.3	28.7
-	7/2/07	6.59	12.9	>4000	<1.0	<2.0	<2.0	<4.0	15.0	30.0
	1/31/08	6.69	12.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.3
	6/24/08	6,52	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.4
	12/29/08	6.50	14.7	>4000	<1.0	<2.0	<2.0	<4.0	6.2	30.1
	6/29/09	6.52	14.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.8
	12/15/09	6.51	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.9	30.6
	6/23/10	6.61	12.4	>4000	<1.0	<2.0	<2.0	<4.0	5.0	31.8
	12/13/10	6.80	14.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.7
	6/21/11	6.62	12.3	>4000	0.28	<1.0	<1.0	<2.0	7.1	29.2
	7/12/11	6.58	12.4	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
Tar	12/21/11	6.56	13.8	>4000	1.00	<2.0	<2.0	<2.0	10.3	34.5
	1/13/12	6.55	14.0	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	6/19/12	6.76	13.4	>4000	<2.0	<2.0	<2.0	<2.0	<4.9	33.3
	12/17/12	6.80	14.3	>4000	<0.2	<1.0	<1.0	<2.0	5.8	31.8
	06/13/13	6.65	12.6	>4000	1.70	<1.0	<1.0	<2.0	<5.2	26.2
	07/1/13	6.70	12.5	>4000	1.50	<1.0	<1.0	<2.0	NA	NA
	10/10/13	6.71	12.6	>4000	3.60	<1.0	<1.0	<2.0	NA	NA
	12/12/13	6.75	14.1	>4000	3.00	<1.0	<1.0	<2.0	<4.9	22.9
	6/23/14	6.68	12.7	>4000	45.50	<2.0	1.7J	<2.0	<4.8	42.8
	7/9/14	6.60	12.5	>4000	12.00	<1.0	<1.0	<2.0	NS	NS

TABLE 1
Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC⁴ (mg/L)
OW-2	9/18/02	7.05	14.8	>4000	<.15	<.18	<.24	<.63	<1.6	230.0
74	12/16/02	7.09	14.0	>4000	<.15	<.18	<.24	<.63	<1.6	60.0
	6/30/03	7.28	12.9	>4000	<.15	<.18	<.24	<.63	<1.7	150.0
	12/30/03	7.23	13.3	>4000	<.15	<.18	<.24	<.63	<1.7	58.0
	6/30/04	6.86	13.0	>4000	<.18	<.21	<.17	<.96	<1.5	37.0
	12/29/04	6.80	12.3	>4000	<.18	<.21	<.17	<.96	<1.4	54.0
	6/30/05	7.18	12.5	>4000	<.07	<.07	<.07	<.20	<1.5	48.0
	12/28/05	7.23	14.5	>4000	<.07	<.07	<.07	<.20	<1.5	48.0
	6/29/06	7.22	12.9	>4000	<.07	<.07	<.08	<.20	<1.5	59.0
	1/25/07	7.37	12.8	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.4
	7/2/07	7.18	13.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	36.7
	1/31/08	7.27	12.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.0
	6/24/08	7.18	12.1	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	47.1
	12/29/08	7.13	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<4.0	45.4
	6/29/09	7.15	14.2	>4000	<1.0	<2.0	<2.0	<4.0	5.7	43.9
	12/15/09	7.11	13.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.1
	6/23/10	7.30	12.4	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.5
	12/13/10	7.14	13.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.5
	6/21/11	7.19	12.5	>4000	<0.2	<1.0	<1.0	<2.0	4.9	37.2
	12/21/11	7.21	12.5	>4000	0.25	<2.0	<2.0	<2.0	12.8	46.4
	1/13/12	7.20	13.0	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	6/19/12	7.30	12.4	>4000	<1.0	<2.0	<2.0	<2.0	<4.8	45.4
	12/17/12	7.34	13.2	>4000	<0.2	<1.0	<1.0	<2.0	<4.8	46.2
	6/13/13	7.15	12.5	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	46.2
	12/12/13	7.35	13.8	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	42.6
2 miles	6/23/14	7.10	12.5	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	33.6
OW-3	9/18/02	6.88	15.4	>4000	<.15	<.18	<.24	<.63	<5.1	95.0
	12/16/02	7.08	15.3	>4000	<.15	<.18	<.24	<.63	<1.6	63.0
	6/30/03	7.05	14.6	>4000	<.15	<.18	<.24	<.63	<1.6	200.0
	12/30/03	7.27	13.4	>4000	<.15	<.18	<.24	<.63	<1.8	85.0
	6/30/04	6.89	12.4	>4000	3.5	1.3	<.17	<.96	<2.0	68.0
	9/9/04 ⁵	6.86	13.5	>4000	<.18	<.17	<.17	<.96	NA	NA

TABLE 1
Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

									-	
Sample	Date	рН	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC⁴ (mg/L)
N .	12/29/04	6.65	12.3	>4000	<.18	<.21	<.17	<.96	<1.5	78.0
	6/30/05	6.90	12.5	>4000	<.07	<.07	<.09	<.20	<1.6	80.0
	12/28/05	7.12	15.2	>4000	<.07	<.07	<.09	<.20	<1.5	92.0
	6/29/06	7.59	15.8	>4000	<.07	<.07	<.09	<.20	<1.5	82.0
1.02	1/25/07	7.47	12.7	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	62.9
	7/2/07	6.90	13.7	>4000	1500	71000	19000	178000	NA	NA
-7/4	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
-5%	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	53.0
	6/29/09	7.15	14.1	>4000	1.0	<2.0	<2.0	<4.0	5.0	43.5
	7/27/09	7.11	14.2	>4000	NA	NA	NA	NA	NA	NA
	12/15/09	7.17	13.0	>4000	1.6	<2.0	<2.0	<4.0	<6.33	46.4
	1/04/10	7.15	13.2	>4000	<1.0	<2.0	<2.0	<4.0	NA	NA
	6/23/10	7.35	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<13.0	44.8
	12/13/10	7.05	13.2	>4000	<1.0	<2.0	<2.0	<4.0	7.6	45.0
	6/21/11	7.19	12.3	>4000	1.4	<1.0	<1.0	<2.0	<6.2	40.1
	7/12/11	7.15	12.4	>4000	<1.0	<1.0	<1.0	<1.0	NA	NA
	12/21/11	7.20	12.0	>4000	1.3	<2.0	<2.0	<2.0	7.3	45.9
	1/13/12	7.15	11.9	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
5.	6/19/12	7.41	13.3	>4000	<1.0	<2.0	<2.0	<2.0	<5.0	40.5
	12/17/12	7.33	13.5	>4000	<0.2	<1.0	<1.0	<2.0	<5.0	37.3
	6/13/13	7.20	12.3	>4000	2.70	<1.0	<1.0	<2.0	<5.4	37.3
	7/01/13	7.15	12.3	>4000	<0.2	<1.0	<1.0	<2.0	NA	NA
	12/12/13	7.03	13.3	>4000	<0.2	<1.0.	<1.0	<2.0	<5.0	36.0
	6/23/14	7.19	12.4	>4000	2.60	<1.0	<1.0	<2.0	<5.0	32.8
	7/17/14	7.11	12.5	>4000	No.	16.77	P-1/1		NS	NS
OW-4	12/15/09	7.14	12.9	>4000	<1.0	<2.0	<2.0	<4.0	NA	68.9
	6/23/10	7.17	13.5	>4000	<1.0	<2.0	<2.0	<4.0	<7.4	78.4
* 10	12/13/10	7.18	13.1	>4000	<1.0	<2.0	<2.0	<4.0	<11	69.9
	6/21/11	7.23	12.2	>4000	<0.2	<1.0	<1.0	<2.0	<6.4	68.1
- 1/2	12/21/11	7.12	11.7	>4000	<0.2	<2.0	<2.0	<2.0	8.1	73.8

TABLE 1
Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC⁴ (mg/L)
OW-4	6/19/12	7.41	14.0	>4000	<1.0	<2.0	<2.0	<2.0	<5.2	71.3
(Cont.)	12/17/12	7.33	12.7	>4000	<0.2	<1.0	<1.0	<2.0	<6.3	70.5
	6/13/13	7.25	12.3	>4000	<0.2	<1.0	<1.0	<2.0	<7.4	68.3
	12/12/13	7.29	12.9	>4000	<0.2	<1.0	<1.0	<2.0	<5.3	64.8
	6/23/14	7.21	12.4	>4000	<0.2	<1.0	<1.0	<2.0	<6.8	65.8

1	Benzene, toluene, ethylbenzene, and total xylenes by Method 8021B.	J	Estimated value.
2	Total petroleum hydrocarbons by Method 1664.	mg/L	milligrams per liter.
3	Specific conductance in micro-siemens at 25 degrees Celsius.	NA	Not Analyzed
4	Total organic carbon by Method 415.1.	ug/L	micrograms per liter.
5	Second sample collected in accordance with ground water monitoring plan.	NS	No Sample

TABLE 2 (continued)
Summary of Major Cation¹ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ²	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
OW-3	1/25/07	7.47	12.7	>4000	510	640	24	3700
(Cont.)	7/2/07	6.90	13.7	>4000	NA	NA	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	500	630	20	4400
	6/29/09	7.15	14.1	>4000	520	570	17	4200
	12/15/09	7,17	13.0	>4000	460	630	26	3900
	6/23/10	7.35	12.3	>4000	564	695	<50	4310
5.	12/13/10	7.05	13.2	>4000	512	639	18.9	4030
	6/21/11	7.19	12.3	>4000	422	511	15.5	3130
	12/11/11	7.20	12.0	>4000	455	596	18.0	3960
	6/19/12	7.41	13.3	>4000	447	528	16.8	3530
	12/17/12	7.33	13.5	>4000	466	596	18.9	3520
	6/13/13	7.20	12.3	>4000	412	491	23.8	3790
	12/12/13	7.03	13.3	>4000	426	419	15.9	3030
	6/23/14	7.19	12.4	>4000	411	442	_ 15.1	2590
OW-4	12/15/09	7.14	12.9	>4000	500	600	29	3800
	6/23/10	7.17	13.5	>4000	602	617	<50	4610
	12/13/10	7.18	13.1	>4000	497	583	21.4	3800
	6/21/11	7.23	12.2	>4000	501	559	21	3890
	12/21/11	7.12	11.7	>4000	507	578	22	3910
	6/19/12	7.41	14.0	>4000	504	539	17.9	3740
	12/17/12	7.33	12.7	>4000	519	632	21.5	3950
	6/13/13	7.25	12.3	>4000	475	508	26.8	4100
_	12/12/13	7.29	12.9	>4000	510	532	22.4	3700
	6/23/14	7.21	12,4	>4000	510	537	20.8	3310

¹ By Method 6010B.

B Analyte detected in blank

² Specific conductance in micro-siemens at 25 degrees Celsius.

mg/L milligrams per liter.

NS No Sample

TABLE 3
Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N³ (mg/L)	Nitrite as N³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	890	<1	<.36	<.34	2500	3300
	12/16/02	6.54	14.9	>4000	880	<1	<1.4	<1.3	2400	3800
	6/303/03	6.64	13.2	>4000	NS	NS	<1.8	<2.5	1900	3400
	12/30/03	6.54	14.1	>4000	880	<1.2	<0.01	<0.02	2300	1000
	6/30/04	6.19	13.2	>4000	780	<1.2	<0.02	<0.02	2100	3800
	12/29/04	6.30	12.9	>4000	840	<3.4	<0.07	<0.04	2100	3400
	6/30/05	6.73	13.2	>4000	850	<1.2	<0.02	<0.02	2400	3900
	12/28/05	6.85	15.5	>4000	860	<1.2	<0.02	<0.02	2600	4500
	6/29/06	6.54	13.5	>4000	850	<1.2	<0.02	<0.02	2700	4800
5	1/25/07	6.81	13.3	>4000	1000	<5.0	<0.56	<0.76	2030	3880
	7/2/07	6.59	12.9	>4000	976	<5.0	<0.10	<0.40	1970	3940
	1/31/08	6.69	12.9	>4000	977	<5.0	<0.25	<0.40	1870	4210
	6/24/08	6.52	12.3	>4000	936	<5.0	<2.3	<6.1	1830	4400
	12/29/08	6.50	14.7	>4000	754	<5.0	<.45	<15	1730	9070
0.00	6/29/09	6.52	14.9	>4000	763	<5.0	<.90	<3.1	1690	4690
	12/15/09	6.51	13.3	>4000	742	<5.0	<1.5	<1.5	1640	4880
	6/23/10	6.61	12.4	>4000	707	<5.0	<0.90	<6.1	1650	4780
	12/13/10	6.80	14.6	>4000	740	<5.0	<0.90	<15	1740	5080
	6/21/11	6.62	12.3	>4000	705	<5.0	< 0.45	<15	1680	4650
	12/21/11	6.56	13.8	>4000	803	<5.0	<0.90	<6.1	1660	4150
	6/19/12	6.76	13.4	>4000	822	<5.0	<0.90	<2.5	1790	4170
and the same of	12/17/12	6.80	14.3	>4000	792	<5.0	<0.20	<0.4	1890	4120
	6/13/13	6.65	12.6	>4000	972	<5.0	<0.50	<0.2	2260	2480
	12/12/13	6.75	12.5	>4000	888	<5.0	<0.10	<0.04	2000	2090
	6/23/14	6.68	12.7	>4000	1070	<5.0	<0.10	<0.04	281	1600
OW-2	9/18/02	7.05	14.8	>4000	1100	<1	13	<.84	5200	5300
	12/16/02	7.09	14.0	>4000	1100	<1	5	<1.7	4700	5800
	6/30/03	7.28	12.9	>4000	NS	NS	16	<2.5	5300	4200
9007	12/30/03	7.23	13.3	>4000	1100	<1.2	16	<0.09	5200	4500
	6/30/04	6.86	13.0	>4000	960	<1.2	16	<0.25	5700	5000

TABLE 3 (continued)
Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N ³ (mg/L)	Nitrite as N³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-2	12/29/04	6.80	12.3	>4000	1000	<3.4	13	<0.04	5000	4300
(cont)	6/30/05	7.18	12.5	>4000	1100	<1.2	12	<0.25	5800	4500
	12/28/05	7.23	14.5	>4000	1000	<1.2	14	16	5600	5400
	6/29/06	7.22	12.9	>4000	970	<1.2	9	<0.25	5600	6100
	1/25/07	7.37	12.8	>4000	1210	<5.0	7.1	<1.9	4930	5000
	7/2/07	7.18	13.3	>4000	1190	<5.0	9	<1.0	5270	4790
-3/	1/31/08	7.27	12.6	>4000	1200	<5.0	6.6	<.40	4640	4500
	6/24/08	7.18	12.1	>4000	1170	<5.0	4.26	<6.1	4400	5200
	12/29/08	7.13	14.0	>4000	950	<5.0	7.8	<15	4830	4940
-	6/29/09	7.15	14.2	>4000	931	<5.0	7.2	<6.1	4900	5070
	12/15/09	7.11	13.0	>4000	930	<5.0	12.2	<1.5	6240	4230
	6/23/10	7.30	12.4	>4000	904	<5.0	6.4	<15.0	4960	5160
	12/13/10	7.14	13.6	>4000	930	<5.0	7.9	<15.0	6160	5750
	6/21/11	7.19	12.5	>4000	948	<5.0	5.7	<15.0	4740	4870
	12/21/11	7.21	12.5	>4000	986	<5.0	8.8	<6.1	5270	4740
	6/19/12	7.30	12.4	>4000	951	<5.0	4.3	<2.5	4730	4890
	12/17/12	7.34	13.2	>4000	950	<5.0	7.1	<1.0	5520	5060
	6/13/13	7.15	12.5	>4000	982	<5.0	5.9	<0.8	5170	4840
	12/12/13	7.35	13.8	>4000	944	<5.0	9.5	<0.08	5500	4320
	6/23/14	7.10	12.5	>4000	937	<5.0	7.9	<0.20	4700	4000
OW-3	9/18/02	6.88	15.4	>4000	NS	NS	NS	NS	NS	NS
	12/16/02	7.08	15.3	>4000	1100	<1	<1.8	<1.7	8400	3800
	6/30/03	7.13	14.6	>4000	NS	NS	2.0J	<2.5	6100	3800
	12/30/03	7.27	13.4	>4000	1200	<1.2	0.24	< 0.09	6300	1200
	6/30/04	6.89	12,4	>4000	920	<1.2	0.20	<0.02	5400	4900
	12/29/04	6.65	12.3	>4000	1100	<3.4	<0.07	<0.07	6700	3200
	6/30/05	6.90	12.5	>4000	1100	<1.2	<0.28	<0.25	8000	3800
	12/28/05	7.12	15.2	>4000	1100	<1.2	6.2	11	6800	3800
	6/29/06	6.54	13.5	>4000	1100	<1.2	2.7	<0.25	680	4800
	1/25/07	7.47	12.7	>4000	1100	<5.0	<1.4	<1.9	5900	4750

TABLE 3 (continued)
Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	рН	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N³ (mg/L)	Nitrite as N ³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-3	7/2/07	6.9	13.7	>4000	NA	NA	NA	NA	NA	NA
(Cont)	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	1200	<5.0	4.3	1.9	6100	4390
	6/29/09	7.15	14.1	>4000	919	<5.0	7.4	<6.1	5010	4970
	12/15/09	7.17	13.0	>4000	920	<5.0	6.2	<1.5	4740	5050
	6/23/10	7.35	12.3	>4000	960	<5.0	8.0	<6.1	5960	3920
	12/13/10	7.05	13.2	>4000	960	<5.0	9.5	<15.0	5960	4690
	6/21/11	7.19	12.3	>4000	973	<5.0	4.0	<15.0	5100	3490
	12/21/11	7.20	12.0	>4000	988	<5.0	4.1	<6.1	5620	3650
	6/19/12	7.40	13.3	>4000	959	<5.0	8.8	<2.5	5690	3560
	12/17/12	7.33	13.5	>4000	1030	<5.0	0.57	0.21	5810	3440
	6/13/13	7.20	12.3	>4000	973	<5.0	11.2	1.1	5820	3490
	12/12/13	7.03	13.3	>4000	908	<5.0	0.7	0.09	4550	2770
	6/23/14	7.19	12.4	>4000	919	<5.0	9.6	2.9	4990	2960
OW-4	12/15/09	7.14	12.9	>4000	276	<5.0	89.3	<1.5	6450	4350
	6/23/10	7.17	13.5	>4000	257	<5.0	80.2	<6.1	6650	3580
	12/13/10	7.18	13.1	>4000	300	<5.0	69.1	<15.0	7880	3840
	6/21/11	7.23	12.2	>4000	262	<5.0	71.0	<15.0	6880	3690
	12/21/11	7,12	11.7	>4000	322	<5.0	69.9	<6.1	7210	3430
230	6/19/12	7.41	14.0	>4000	261	<5.0	87.5	<2.5	6990	3920
	12/17/12	7.33	12.7	>4000	262	<5.0	78.7	<0.08	7390	3780
VV	6/13/13	7.25	12.3	>4000	248	<5.0	97.0	<0.8	6980	4120
	12/12/13	7.29	12.9	>4000	348	<5.0	49.3	<0.08	7560	2810
	6/23/14	7.21	12,4	>4000	284	<5.0	75.4	<0.20	6920	3270

Specific conductance in micro-siemens at 25 degrees Celsius.

mg/L milligrams per liter. NS No sample.

² By Method 310.1.

³ By Method 300.

J Analyte was detected above the Reporting Limit but below the Quantitation Limit.





07/07/14





Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

PO# 7591

Accutest Job Number: D59055

Sampling Date: 06/23/14

Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369 mhattel@msn.com; slaramesa@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 43



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Seed wall

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

K.P. Kauffman Company, Inc.

Wattenberg GW Project No: PO# 7591

Job No:

D59055

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
D59055-1	06/23/14	08:45 MH	06/23/14	AQ	Ground Water	OW-1
D59055-1F	06/23/14	08:45 MH	06/23/14	AQ	Groundwater Filtered	OW-1
D59055-2	06/23/14	07:50 MH	06/23/14	AQ	Ground Water	OW-2
D59055-2F	06/23/14	07:50 MH	06/23/14	AQ	Groundwater Filtered	OW-2
D59055-3	06/23/14	07:00 MH	06/23/14	AQ	Ground Water	OW-3
D59055-3F	06/23/14	07:00 MH	06/23/14	AQ	Groundwater Filtered	OW-3
D59055-4	06/23/14	06:05 MH	06/23/14	AQ	Ground Water	OW-4
D59055-4F	06/23/14	06:05 MH	06/23/14	AQ	Groundwater Filtered	OW-4







Client: K.P. Kauffman Company, Inc.

Job No

D59055

Site:

Wattenberg GW

Report Date

7/7/2014 3:23:44 PM

On 06/23/2014, 4 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 6.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59055 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AO

Batch ID: GTA125

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59055-1MS, D59055-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) and matrix spike duplicate (MSD) recovery(s) of Benzene are outside control limits. Outside control limits due to possible matrix interference.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP13281

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58834-1FMS, D58834-1FMSD, D58834-1FSDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN25366

The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID:

GP12969

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP12887

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59055-4MS were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate analysis.
- D59055-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D59055-4 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59055-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59055-2 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2320B-2011

Matrix AQ

Batch ID:

GN25283

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59045-2MS, D59045-2MSD, D59055-2DUP were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix AQ

Batch ID:

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ

Batch ID: GN25285

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2540C-2011

Matrix AO

Batch ID:

GN25298

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59056-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011

Batch ID: GP12920

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59118-1MS, D59118-1MSD, D59118-2DUP were used as the QC samples for the Total Organic Carbon analysis.

Matrix AQ

Batch ID: GP12944

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59176-1MS, D59176-1MSD, D59176-2DUP were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits
Job Number: D59055
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg GW
Collected: 06/23/14

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
D59055-1 OW-1					
Benzene	45.5	1.0	0.20	ug/l	SW846 8021B
Ethylbenzene	1.7 J	2.0	1.0	ug/l	SW846 8021B
Alkalinity, Bicarbonate as CaCO3	1070	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	1070	5.0		mg/l	SM 2320B-2011
Chloride	1600	50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved	4240	10		mg/l	SM 2540C-2011
Specific Gravity by Hydrometer	1.0039				ASTM D287
Sulfate	281	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	42.8	5.0		mg/l	SM 5310B-2011
рН	7.20			su	SM4500HB+-2011/9040C
D59055-1F OW-1					
Calcium	116000	400	- 0, 10	ug/l	SW846 6010C
Magnesium	144000	200		ug/l	SW846 6010C
Potassium	4320	1000		ug/l	SW846 6010C
Sodium	1170000	4000		ug/l	SW846 6010C
D59055-2 OW-2					
Alkalinity, Bicarbonate as CaCO3	937	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	937	5.0		mg/l	SM 2320B-2011
Chloride	4000	100		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	7.9	0.50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved	14800	10		mg/l	SM 2540C-2011
Sulfate	4700	100		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	33.6	5.0		mg/l	SM 5310B-2011
D59055-2F OW-2					
Calcium	476000	400		ug/l	SW846 6010C
Magnesium	535000	200		ug/l	SW846 6010C
Potassium	15900	1000		ug/l	SW846 6010C
Sodium	3030000	4000		ug/l	SW846 6010C
D59055-3 OW-3					
Benzene	2.6	1.0	0.20	ug/l	SW846 8021B
Alkalinity, Bicarbonate as CaCO3	919	5.0		mg/I	SM 2320B-2011
Alkalinity, Total as CaCO3	919	5.0		mg/l	SM 2320B-2011
Chloride	2960	250		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	9.6	0.20		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrite	2.9	0.080		mg/l	EPA 300.0/SW846 9056

Summary of Hits Job Number: D59055 Account: K.P. Kauffman Company, Inc. Project: Wattenberg GW Collected: 06/23/14

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Solids, Total Dissolved	12800	10		mg/l	SM 2540C-2011
Sulfate	4990	250		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	32.8	5.0		mg/l	SM 5310B-2011
D59055-3F OW-3					
Calcium	411000	400		ug/l	SW846 6010C
Magnesium	442000	200		ug/l	SW846 6010C
Potassium	15100	1000		ug/l	SW846 6010C
Sodium	2590000	4000		ug/l	SW846 6010C
D59055-4 OW-4					
Alkalinity, Bicarbonate as CaCO3	284	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	284	5.0		mg/l	SM 2320B-2011
Chloride	3270	250		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	75.4	5.0		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved	16900	10		mg/l	SM 2540C-2011
Sulfate	6920	250		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	65.8	5.0		mg/l	SM 5310B-2011
D59055-4F OW-4					
Calcium	510000	400		ug/l	SW846 6010C
Magnesium	537000	200		ug/l	SW846 6010C
Potassium	20800	1000		ug/l	SW846 6010C
Sodium	3310000	4000		ug/l	SW846 6010C



TEREST

Report of Analysis

OW-1 Client Sample ID:

Lab Sample ID:

D59055-1

Matrix:

Project:

AQ - Ground Water

Method:

SW846 8021B Wattenberg GW

Date Sampled: 06/23/14 Date Received:

06/23/14

Percent Solids: n/a

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22506.D	1	07/03/14	EV	n/a	n/a	GTA1257
D #0							

Run #2

Purge Volume

5.0 ml Run #1

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4	Benzene Toluene Ethylbenzene	45.5 ND 1.7	1.0 2.0 2.0	0.20 1.0 1.0	ug/l ug/l ug/l	J
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts	
120-82-1	1,2,4-Trichlorobenzene	118%		60-14	10%	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: OW-1 Lab Sample ID:

D59055-1

AQ - Ground Water

Date Sampled: 06/23/14

Date Received:

06/23/14

Project:

Matrix:

Wattenberg GW

Percent Solids:

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Alkalinity, Bicarbonate as CaC	2 1070	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	1070	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	1600	50	mg/l	100	06/23/14 15:06	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 4.8	4.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate a	< 0.10	0.10	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite a	< 0.040	0.040	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	4240	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Specific Gravity by Hydrometer	e 1.0039		Ü	1	07/01/14	MM	ASTM D287
Sulfate	281	5.0	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Total Organic Carbon	42.8	5.0	mg/l	5	06/30/14 13:29	SK	SM 5310B-2011
рН	7.20		su	1	06/23/14 14:40	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: OW-1

Lab Sample ID: Matrix:

D59055-1F

AQ - Groundwater Filtered

Date Sampled: 06/23/14 Date Received:

06/23/14

Percent Solids: n/a

Project:

Wattenberg GW

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	116000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	144000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	4320	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	1170000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933 (2) Instrument QC Batch: MA4938 (3) Prep QC Batch: MP13281

Client Sample ID: OW-2

D59055-2 Lab Sample ID:

Matrix:

AQ - Ground Water

Method: Project:

SW846 8021B Wattenberg GW Date Sampled:

06/23/14

Date Received: 06/23/14

Percent Solids: n/a

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22512.D	1	07/03/14	EV	n/a	n/a	GTA1257
D #2							

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylenes (total)	ND ND ND ND	1.0 2.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts	
120-82-1	1,2,4-Trichlorobenzene	118%		60-1	40%	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: OW-2

Lab Sample ID: Matrix:

D59055-2

AQ - Ground Water

Date Sampled: 06/23/14 Date Received:

06/23/14

Percent Solids: n/a

Project:

Wattenberg GW

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Alkalinity, Bicarbonate as Ca	C 937	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	937	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	4000	100	mg/l	200	06/23/14 15:19	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 4.9	4.9	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	7.9	0.50	mg/l	50	06/23/14 13:07	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite a	< 0.20	0.20	mg/l	50	06/23/14 13:07	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	14800	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	4700	100	mg/l	200	06/23/14 15:19	SK	EPA 300.0/SW846 9056
Total Organic Carbon	33.6	5.0	mg/l	5	06/26/14 14:40	SK	SM 5310B-2011

⁽a) Elevated detection limit due to matrix interference.

Client Sample ID: OW-2 Lab Sample ID:

D59055-2F

Matrix:

AQ - Groundwater Filtered

Date Sampled:

06/23/14

Date Received:

06/23/14

Percent Solids: n/a

Project:

Wattenberg GW

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	476000	400	ug/l	1	06/26/14	00. = 1. = 2	SW846 6010C ¹	SW846 3010A ³
Magnesium	535000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	15900	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	3030000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

Report of Analysis

OW-3 Client Sample ID:

Lab Sample ID:

D59055-3

Matrix:

AQ - Ground Water

Method:

SW846 8021B

Date Sampled: 06/23/14 Date Received:

06/23/14

Percent Solids: n/a

Project:

Wattenberg GW

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22513.D	1	07/03/14	EV	n/a	n/a	GTA1257
Run #2							

LT-TZ	Purge Volume			res to Mul
Run #1	5.0 ml			10.500
Run #2	Tu end d	1 190 190	-018	mina 2k

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylenes (total)	2.6 ND ND ND	1.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
120-82-1	1,2,4-Trichlorobenzene	121%		60-1	40%	

ND = Not detected RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: OW-3 Lab Sample ID: D5905

D59055-3

AQ - Ground Water

Date Sampled: 06/23/14 Date Received: 06/23/14

Percent Solids: n/a

Project:

Matrix:

Wattenberg GW

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Alkalinity, Bicarbonate as CaC	919	5.0	mg/l	1	06/25/14	ID	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	919	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	2960	250	mg/l	500	06/23/14 15:32	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 5.0	5.0	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	9.6	0.20	mg/l	20	06/23/14 13:21	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite	2.9	0.080	mg/l	20	06/23/14 13:21	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	12800	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	4990	250	mg/l	500	06/23/14 15:32	SK	EPA 300.0/SW846 9056
Total Organic Carbon	32.8	5.0	mg/l	5	06/26/14 14:53	SK	SM 5310B-2011

Client Sample ID: OW-3

Lab Sample ID:

D59055-3F

Matrix:

AQ - Groundwater Filtered

Date Sampled: 06/23/14

Date Received: 06/23/14

Percent Solids: n/a

Project:

Wattenberg GW

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	411000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	442000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	15100	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	2590000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

Client Sample ID:

OW-4

Lab Sample ID:

D59055-4

Matrix: Method: AQ - Ground Water

Wattenberg GW

SW846 8021B

Date Sampled:

06/23/14 Date Received: 06/23/14

Percent Solids: n/a

Project:

File ID TA22514.D DF 1

Ву EV

Analyzed

07/03/14

Prep Date n/a

Prep Batch

Analytical Batch

GTA1257 n/a

Run #1 Run #2

Purge Volume

5.0 ml

Run #1

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylenes (total)	ND ND ND ND	1.0 2.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
120-82-1	1,2,4-Trichlorobenzene	124%		60-1	40%	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: OW-4

Lab Sample ID:

D59055-4

Matrix:

AQ - Ground Water

Date Sampled: Date Received:

06/23/14 06/23/14

Percent Solids:

Project:

Wattenberg GW

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Alkalinity, Bicarbonate as CaC	C 284	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	284	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	3270	250	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 6.8	6.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	75.4	5.0	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite a	< 0.20	0.20	mg/l	50	06/23/14 13:34	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	16900	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	6920	250	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
Total Organic Carbon	65.8	5.0	mg/l	5	06/26/14 15:04	SK	SM 5310B-2011

(a) Elevated detection limit due to matrix interference.



Client Sample ID:

OW-4

D59055-4F

Lab Sample ID: Matrix:

AQ - Groundwater Filtered

Date Sampled:

06/23/14

Date Received:

06/23/14

Percent Solids: n/a

Project:

Sodium

Wattenberg GW

Dissolved Metals Analysis Result RL Units DF Prep Analyte

Calcium 510000 400 Magnesium 537000 200 Potassium

20800 1000 3310000 4000

ug/l 1 ug/l 1 ug/l 10

ug/l

06/26/14 06/27/14 KV 06/26/14 06/27/14 KV 06/26/14 06/30/14 KV

06/26/14 06/27/14 KV

Analyzed By

SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ²

SW846 6010C ¹

Method

SW846 3010A ³ SW846 3010A ³ SW846 3010A ³

Prep Method

SW846 3010A 3

(1) Instrument QC Batch: MA4933 (2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit



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Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody



Company N Address 1675 E City Denve	K.P. Kauffman Company, Inc. Broadway, Suite 2800 State		Zip 228	Project N Street	Proj lame:	3(ect info	4036 Yo 03-425-6	engfic	FAX:	When 303-	at Ric -425-	lge, 0		Accutes	Tracking s		Mg, NA)			Accute	order Col	D	- 2	70	Matrix Codes OW- Drinking Wat OW- Ground Wat WW- Water SW- Surface Wat SO- Soll SI-Sludge OI-Oil	er
Project Con Phone # Samplers's Accutest	Susana Lara-Mesa 303-665-1400	SLaraMesa 3-665-1400) SUMMA#	@kpk.com	Fax#	rchase Order	·#			iber of	7	serve	d Bo	1 7	& GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	ပ	CATIONS (Ca, K, Mg	BTEX 8021	ALKALINITY (CARB/BICARB)	S	T T	1. his Ga	SC / SC		LIQ- Other Liquid AIR- Air SOL-Other Solid WP-Wipe	_
Sample #	Fleid ID / Point of Collection	MEOH Vial #	Date	Time	Sampled by	Matrix	# of bottles	戛	ğ 8	-OS24	NONE	Nartisc MED	S	등	S AN	700	8	В	4	TDS	a	~~	1		LAB USE ON	Υ.
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D59055: Chain of Custody Page 1 of 1

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: D59055 Account: KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample GTA1257-MB	File ID TA22504.D	DF 1	Analyzed 07/03/14	By EV	Prep Date n/a	Prep Batch n/a	Analytical Batch GTA1257

The QC reported here applies to the following samples:

Method: SW846 8021B

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	ND ND ND ND	1.0 2.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries		Limits			
120-82-1	1,2,4-Trichlorobenzene	94%	60-140	%		



Blank Spike Summary Job Number: D59055

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample	File ID	DF	Analyzed 07/03/14	By	Prep Date	Prep Batch	Analytical Batch
GTA1257-BS	TA22505.D	1		EV	n/a	n/a	GTA1257

The QC reported here applies to the following samples:

Method: SW846 8021B

Page 1 of 1

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	27.2 45.6 212 216	26.2 44.9 198 221	96 98 94 102	70-130 70-130 70-130 70-130
CAS No.	Surrogate Recoveries	BSP	Lin	nits	
120-82-1	1,2,4-Trichlorobenzene	104%	60-	140%	



⁼ Outside of Control Limits.

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Summary Job Number: D59055

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

The QC reported here applies to the following samples:

Method: SW846 8021B

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	D59055-1 ug/l Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	45.5 1.7 J ND ND	27.2 45.6 212 216	59.8 45.1 198 220	53* a 95 94 102	27.2 45.6 212 216	59.5 44.7 194 218	51* a 94 92 101	1 1 2 1	55-133/30 63-130/30 70-130/30 64-130/30
CAS No.	Surrogate Recoveries	MS	MSD	D590	055-1	Limits				
120-82-1	1,2,4-Trichlorobenzene	107%	108%	1189	%	60-140%	6			

⁽a) Outside control limits due to possible matrix interference.



^{* =} Outside of Control Limits.



Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

06/26/14

Prep Date:					06/26/14	
Metal	RL	IDL	MDL	MB raw	final	
Aluminum	100	8.6	41			
Antimony	30	2.1	19			
Arsenic	25	3.8	5.6			
Barium	10	.2	1.4			
Beryllium	10	.8	1.2			
Boron	50	.8	6.6			
Cadmium	10	.2	.36			
Calcium	400	2.2	41	5.9	<400	
Chromium	10	.3	. 4			
Cobalt	5.0	. 4	.57			
Copper	10	.8	1.9			
Iron	70	1.5	9.5			
Lead	50	2.1	21			
Lithium	5.0	. 4	2.7			
Magnesium	200	6.8	19	6.1	<200	
Manganese	5.0	.01	.46			
Molybdenum	10	. 4	.84			
Nickel	30	.5	.87			
Phosphorus	100	15	20			
Potassium	1000	99	270	9.8	<1000	
Selenium	50	7.1	11			
Silicon	50	4.7	5.2			
Silver	30	.3	.6			
Sodium	400	4.9	170	29.5	<400	
Strontium	5.0	.01	.12			
Thallium	10	1.8	4			
Tin	50	12	16			
Titanium	10	.1	2.1			
Uranium	50	2.9	5.5			
Vanadium	10	. 4	. 4			
Zinc	30	. 4	3.2			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

				MD	
				MB	1
Metal	RL	IDL	MDL	raw	final

(anr) Analyte not requested

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal	D58834-1 Original		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	anr				
Cadmium	anr				
Calcium	110000	133000	25000	92.0	75-125
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Lithium					
Magnesium	8370	35200	25000	107.3	75-125
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	4190	32200	25000	112.0	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	6720	34100	25000	109.5	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits



Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

D58834-1	Spikelot	QC	
Metal Original	S ICPALL2 %	Rec Limits	

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Metal	D58834-1 Original		Spikelot ICPALL2		MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	110000	137000	25000	108.0	3.0	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	8370	35600	25000	108.9	1.1	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	4190	32600	25000	113.6	1.2	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	6720	34400	25000	110.7	0.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

	D58834-1F	Spikelot	MSD	QC
Metal	Original MSD	ICPALL2 % Rec	RPD	Limit

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested $\,$

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Prep Date:			06/26/1	4
Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	26900	25000	107.6	80-120
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	26500	25000	106.0	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	27000	25000	108.0	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26600	25000	106.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			
22.10	anı			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

	BSP	Spikelot	QC
Metal	Result	ICPALL2 % Rec	Limits
etai	Result	ICPALLZ & Rec	TIMILES

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

Prep Date:			06/26/14	
Metal	D58834-1 Original	F SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	110000	118000	7.2	0-10
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	8370	8710	4.1	0-10
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	4190	4220	0.7	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	6720	6670	0.7	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

06/26/14

	D58834-1F	QC
Metal	Original SDL 1:5 %DIF	Limits

(anr) Analyte not requested

General	Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits	
Alkalinity, Bicarbonate as CaC	GN25284	5.0	0.0	mg/l	100	97.8	97.8	90-110%	
Alkalinity, Carbonate	GN25285	5.0	0.0	mg/l	100	97.8	97.8	80-120%	
Alkalinity, Total as CaCO3	GN25283	5.0	0.0	mg/l	100	97.8	97.8	90-110%	
Chloride	GP12887/GN25243	0.50	0.0	mg/l	5	4.97	99.4	90-110%	
HEM Oil and Grease	GP12969/GN25402	5.0	0.0	mg/l	40	32.8	82.0	78-114%	
Nitrogen, Nitrate	GP12887/GN25243	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%	
Nitrogen, Nitrite	GP12887/GN25243	0.0040	0.0	mg/l	0.05	0.0523	104.6	90-110%	
Solids, Total Dissolved	GN25298	10	0.0	mg/l	400	402	100.5	90-110%	
Sulfate	GP12887/GN25243	0.50	0.0	mg/l	5	4.96	99.2	90-110%	
Total Organic Carbon	GP12920/GN25309	1.0	0.0	mg/l	8.82	8.84	100.2	90-110%	
Total Organic Carbon	GP12944/GN25355	1.0	0.0	mg/l	8.82	8.99	101.9	90-110%	
Hq	GN25245			su	8.00	8.03	100.4	99.1-10	

Associated Samples:

Associated Samples:
Batch GN25245: D59055-1
Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25284: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25285: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25298: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12887: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12920: D59055-2, D59055-3, D59055-4
Batch GP12944: D59055-1

Batch GP12944: D59055-1

Batch GP12969: D59055-1, D59055-2, D59055-3, D59055-4

(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP12969/GN25402	mg/l	40	34.9	6.2	20%

Associated Samples: Batch GP12969: D59055-1, D59055-2, D59055-3, D59055-4 (*) Outside of QC limits

DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN25283	D59055-2	mg/l	937	976	4.1	0-20%
Solids, Total Dissolved	GN25298	D59056-1	mg/l	20700	20700	0.0	0-20%
Total Organic Carbon	GP12920/GN25309	D59118-2	mg/l	3.2	3.1	3.2	0-20%
Total Organic Carbon	GP12944/GN25355	D59176-2	mg/l	0.0	0.0	0.0	0-20%

Associated Samples:
Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25298: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12920: D59055-2, D59055-3, D59055-4
Batch GP12944: D59055-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN25283	D59045-2	mg/l	265	100	351	85.3	80-120%
Chloride	GP12887/GN25243	D59055-4	mg/l	2830	2500	5860	103.6	80-120%
Chloride	GP12887/GN25243	D59055-4	mg/l	3270	2500	5860	103.6	80-120%
Nitrogen, Nitrate	GP12887/GN25243	D59055-4	mg/l	72.7	50	125	99.2	80-120%
Nitrogen, Nitrate	GP12887/GN25243	D59055-4	mg/l	75.4	50	125	99.2	80-120%
Nitrogen, Nitrite	GP12887/GN25243	D59055-4	mg/l	0.0	25	29.7	118.8	80-120%
Nitrogen, Nitrite	GP12887/GN25243	D59055-4	mg/l	0.0	25	29.7	118.8	80-120%
Sulfate	GP12887/GN25243	D59055-4	mg/l	3140	2500	9440	100.8	80-120%
Sulfate	GP12887/GN25243	D59055-4	mg/l	6920	2500	9440	100.8	80-120%
Total Organic Carbon	GP12920/GN25309	D59118-1	mq/l	3.2	10	13.4	102.0	80-120%
Total Organic Carbon	GP12944/GN25355	D59176-1	mg/l	0.51	10	10.5	99.9	80-120%

Associated Samples:

Batch GP12887: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12887: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12920: D59055-2, D59055-3, D59055-4

Batch GP12944: D59055-1 (*) Outside of QC limits (N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D59055 Account: KPKCOD - K.P. Kauffman Company, Inc. Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN25283	D59045-2	mg/l	265	100	346	1.2	20%
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.1	2.3	20%
Total Organic Carbon	GP12944/GN25355	D59176-1	mg/l	0.51	10	10.2	2.9	20%

Associated Samples:

Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4 Batch GP12920: D59055-2, D59055-3, D59055-4

Batch GP12944: D59055-1 (*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits





07/15/14



24

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

7591

Accutest Job Number: D59576

Sampling Date: 07/09/14

Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369 mhattel@msn.com; slaramesa@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 13



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Sead attle

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

K.P. Kauffman Company, Inc.

Job No:

D59576

Wattenberg GW Project No: 7591

Sample	Collected			Matri	ix	Client	
Number	Date	Time By	Received	Code	Type	Sample ID	
D59576-1	07/09/14	08:00 MDH	07/09/14	AQ	Ground Water	OW-1	





CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No

D59576

Site:

Wattenberg GW

Report Date

7/15/2014 4:41:36 PM

On 07/09/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 11.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59576 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ

Batch ID: GTA1264

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- * Sample(s) D59511-21MS, D59511-21MSD were used as the QC samples indicated.
- D59576-1: The pH of the sample was >2 at time of analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits Job Number: D59576 Account: K.P. Kauffman Company, Inc. Project: Wattenberg GW

Collected:

07/09/14

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D59576-1	OW-1					
Benzene ^a		12.0	1.0	0.20	ug/l	SW846 8021B

(a) The pH of the sample was > 2 at time of analysis.



Sample Results	
Report of Analysis	



Report of Analysis

Client Sample ID: OW-1

Lab Sample ID:

D59576-1

Matrix:

AQ - Ground Water

Method: Project:

SW846 8021B Wattenberg GW Date Sampled: Date Received:

07/09/14 07/09/14

Percent Solids: n/a

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1 a	TA22628.D	1	07/14/14	EV	n/a	n/a	GTA1264
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL U	nits	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylenes (total)	12.0 ND ND ND	1.0 2.0 2.0 2.0 2.0	0.20 ug 1.0 ug 1.0 ug 2.0 ug	g/l g/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	110%		60-140%	, 5	

(a) The pH of the sample was > 2 at time of analysis.

RL = Reporting Limit E = Indicates value exceeds calibration range J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound





Custod	ly Docu	ments a	nd Other For	ms

4	ACCUTES	37.					036 You 3-425-6								Tracking					Bottle	Order Co	nirol #		
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Address	K.P. Kauffman Company, Inc.			Street									-											GW- Ground Water WW- Water
1675 B	roadway, Suite 2800														μī				(CARB/BICARB)	ł				SW- Surface Water
City	State		2lp	City					State						NITRITE,)E)		3		5					SO- Soil SL-Sludge
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Project Cont	sct: Susana Lara-Mesa	SLaraMesa@	køk.com	Project #										199	변종		₹.		AR.					LIQ-Other Liquid
Phone #	303-665-1400			Fax #										GREASE 1664	ITRATE, NI CHLORIDE)		à,		5					AIR- Air
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D59576: Chain of Custody Page 1 of 1





GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary Job Number: D59576

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1264-MB	TA22623.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

Page 1 of 1

D59576-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	ND ND ND ND	1.0 2.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries		Limits			
120-82-1	1,2,4-Trichlorobenzene	109%	60-140	%		



Page 1 of 1

Blank Spike Summary Job Number: D59576

Account:

 $\label{eq:KPKCOD} \begin{array}{l} \text{KPKCOD K.P. Kauffman Company, Inc.} \\ \text{Wattenberg GW} \end{array}$

Project:

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1264-BS	TA22624.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

D59576-1

CAS No.	Compound		Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)		27.2 45.6 212 216	28.2 49.3 219 243	104 108 103 113	70-130 70-130 70-130 70-130
CAS No.	Surrogate Recov	eries	BSP	Lim	its	
120-82-1	1,2,4-Trichlorobe	enzene	115%	60-1	40%	



^{* =} Outside of Control Limits.

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Summary Job Number: D59576 Account: KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

	• •						
Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
D59511-21MS	TA22626.D	1	07/14/14	EV	n/a	n/a	GTA1264
D59511-21MSD	TA22627.D	1	07/14/14	EV	n/a	n/a	GTA1264
D59511-21	TA22625.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

D59576-1

CAS No.	Compound	D59511-21 ug/l Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	ND ND ND ND	27.2 45.6 212 216	27.6 48.3 213 238	101 106 101 110	27.2 45.6 212 216	27.6 47.8 211 236	101 105 100 109	0 1 1 1	55-133/30 63-130/30 70-130/30 64-130/30
CAS No.	Surrogate Recoveries	MS	MSD	D59	511-21	Limits				
120-82-1	1,2,4-Trichlorobenzene	113%	112%	1109	%	60-140%)			



^{* =} Outside of Control Limits.



07/17/14





Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

7591

Accutest Job Number: D59801

Sampling Date: 07/16/14

Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369 mhattel@msn.com; slaramesa@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 13



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman Laboratory Director

Seed attle

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.

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5.1: Chain of Custody	9
Section 6: GC Volatiles - QC Data Summaries	10
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6.3: Matrix Spike/Matrix Spike Duplicate Summary	13

Sample Summary

K.P. Kauffman Company, Inc.

Job No:

D59801

Wattenberg GW Project No: 7591

Sample	Collected			Matr	ix	Client	Maria Maria
Number	Date	Time By	Received	Code	Туре	Sample ID	
D59801-1	07/16/14	11:20 MDH	07/16/14	AQ	Ground Water	OW-3	



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No

D59801

Site:

Wattenberg GW

Report Date

7/17/2014 12:03:22 PM

On 07/16/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 11.8 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59801 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ

Batch ID: GTA1265

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59801-1MS, D59801-1MSD were used as the QC samples indicated.
- D59801-1MS and D59801-1MSD: The pH of the sample was >2 at time of analysis.
- D59801-1: The pH of the sample was >2 at time of analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Page 1 of 1

Summary of Hits
Job Number: D59801
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Collected:

07/16/14

_	Client Sample ID	Result/					
Analyte		Qual	RL	MDL	Units	Method	

D59801-1

OW-3

No hits reported in this sample.



Sample Results	
----------------	--

Report of Analysis



Report of Analysis

Client Sample ID: OW-3

Lab Sample ID:

D59801-1

Matrix: Method: AQ - Ground Water

SW846 8021B

Date Sampled: 07/16/14 Date Received:

07/16/14 Percent Solids: n/a

Project:

Wattenberg GW

File ID By DF Analyzed Prep Date Prep Batch Analytical Batch Run #1 a TA22662.D 1 07/16/14 EV n/a n/a GTA1265

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xylenes (total)	ND ND ND ND	1.0 2.0 2.0 2.0	0.20 1.0 1.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
120-82-1	1,2,4-Trichlorobenzene	107%		60-1	40%	

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound





Misc. Forms	
Ar REELECT	
Custody Documents and Other Forms	

Includes the following where applicable:

• Chain of Custody



4036 Youngfield St, Wheat Ridge, CO 80033 303-425-6021 FAX: 303-425-6854 FOREX Trackings Accounted Custors 9 Acc	620					C	HA	IN	()F	f' (Cl	J.S	T	0]	DY											
Client / Reporting information Project Information Requested Analysis Matrix Codes K.P. Kauffman Company, Inc. Address 1675 Broadway, Suite 2800 City State Denver Co 80202-4628 Fort Lupton CO Susana Lara-Mesa Susana Lara-Mesa Susana Lara-Mesa Susana Lara-Mesa Susana Lara-Mesa Fax # Susana Lara-Mesa Susana Lara-Mesa Field ID / Point of Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless of Susana Collection MEDH Visit M Date Time Sempled by Matrix bottless o		ACCUTES	ST				3	03-425-	6021	FA	AX: 3	303-4	25-6	854			Tracking	*				Bottle (Order Co	ntrol #			····
Company Name K.P. Kauffman Company, Inc. Address K.P. Kauffman Company, Inc. Address 1675 Broadway, Suite 2800 City State Denver CO 80202-4628 Fort Lupton CO Project ## Phone # 303-665-1400 Samplers's Name MICHAEL HATTEL (303-665-1400) Citient Purchase Order ## Collection MECH Visit Marix Mumber of preserved Bottles LAB USE ONL. Address Address Martrx BERG GROUNDWATER Strate WW-W-Water WW-W-W-W-W-W-W-W-W-W-W-W-W-W-W-W-W-W-	- Constant															Accute	st Quote #					Accute	st Job #	05	59	801	
K.P. Kauffman Company, Inc. Address 1675 Broadway, Suite 2800 City State Denver CO 80202-4628 Fort Lupton CO Susana Lara-Mesa SLaraMesa@kpk.com Project 8 Susana Lara-Mesa SharaMesa@kpk.com Project 8 Susana Lara-Mesa SharaMesa@kpk.com Project 8 Susana Lara-Mesa SharaMesa@kpk.com Project 8 Fax # Accutest Sampler* Rield ID / Point of Collection MECH Viel M Date Time Sampledby Matrix bottles OW-1 OW-2 OW-3 OW-3 OW-4 MDH GW 9 X X X X X X X X X X X X X X X X X X	S 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- 18 mg	-		Pro	ect Info	rmation	-	100	V = 31	1.1	i voloji	Be 2.				-		1	Pogui	antad	Amatria	21.2	0.5654		
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D59801: Chain of Custody Page 1 of 1





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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike SummariesMatrix Spike and Duplicate Summaries



Method Blank Summary Job Number: D59801

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1265-MB	TA22660.D	1	07/16/14	EV	n/a	n/a	GTA1265

The QC reported here applies to the following samples:

Method: SW846 8021B

Page 1 of 1

D59801-1

CAS No.	Compound	Result	RL MDL	Units Q	
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	ND ND ND ND	1.0 0.20 2.0 1.0 2.0 1.0 2.0 2.0	ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries		Limits		
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%		



Blank Spike Summary Job Number: D59801

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample	File ID	DF	Analyzed 07/16/14	By	Prep Date	Prep Batch	Analytical Batch
GTA1265-BS	TA22661.D	1		EV	n/a	n/a	GTA1265

The QC reported here applies to the following samples:

Method: SW846 8021B

Page 1 of 1

D59801-1

CAS No.	Compound			Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)			27.2 45.6 212 216	27.7 48.2 214 237	102 106 101 110	70-130 70-130 70-130 70-130
CAS No.	Surrogate Recoveries			BSP	Lim	nits	
120-82-1	1,2,4-Trichlorobenzene			109%	60-	140%	



^{* =} Outside of Control Limits.

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Summary Job Number: D59801

Account:

KPKCOD K.P. Kauffman Company, Inc.

Project:

Wattenberg GW

Sample File ID DF Analyze D59801-1MS a TA22663.D 1 07/16/1 D59801-1MSD a TA22664.D 1 07/16/1 D59801-1 a TA22662.D 1 07/16/1	4 EV n/a 4 EV n/a	n/a Analytical Batc n/a GTA1265 n/a GTA1265 n/a GTA1265
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The QC reported here applies to the following samples:

Method: SW846 8021B

D59801-1

CAS No.	Compound	D59801-1 ug/l Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4 108-88-3 1330-20-7	Benzene Ethylbenzene Toluene Xylenes (total)	ND ND ND ND	27.2 45.6 212 216	27.9 48.3 214 238	103 106 101 110	27.2 45.6 212 216	27.5 47.5 210 233	101 104 99 108	1 2 2 2	55-133/30 63-130/30 70-130/30 64-130/30
CAS No.	Surrogate Recoveries	MS	MSD	D59	801-1	Limits				
120-82-1	1,2,4-Trichlorobenzene	114%	115%	1079	%	60-140%	,)			

⁽a) The pH of the sample was > 2 at time of analysis.



^{* =} Outside of Control Limits.